

82E12 - LOGIC CARD EDGE CONNECTOR

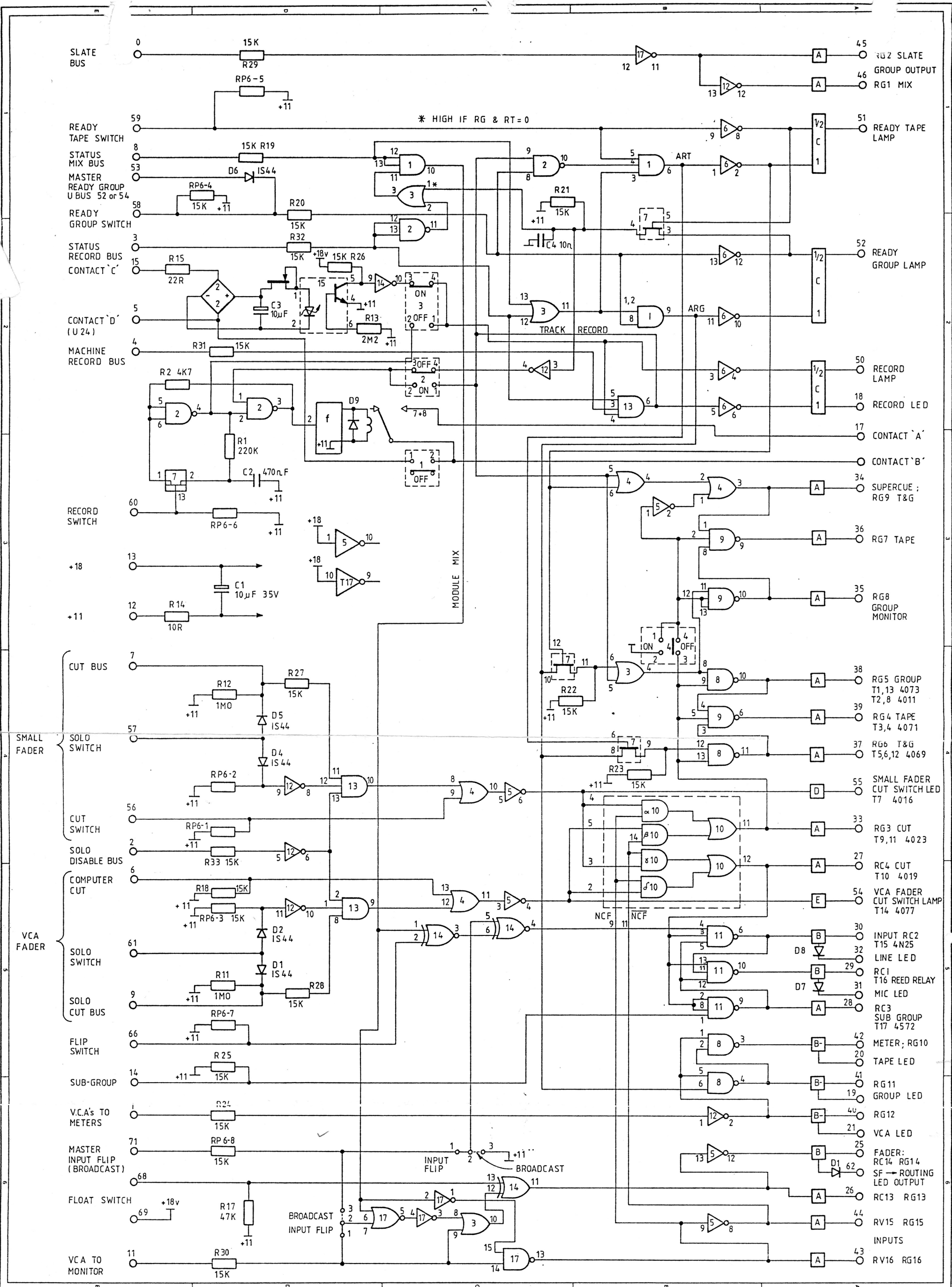
From: 82E12

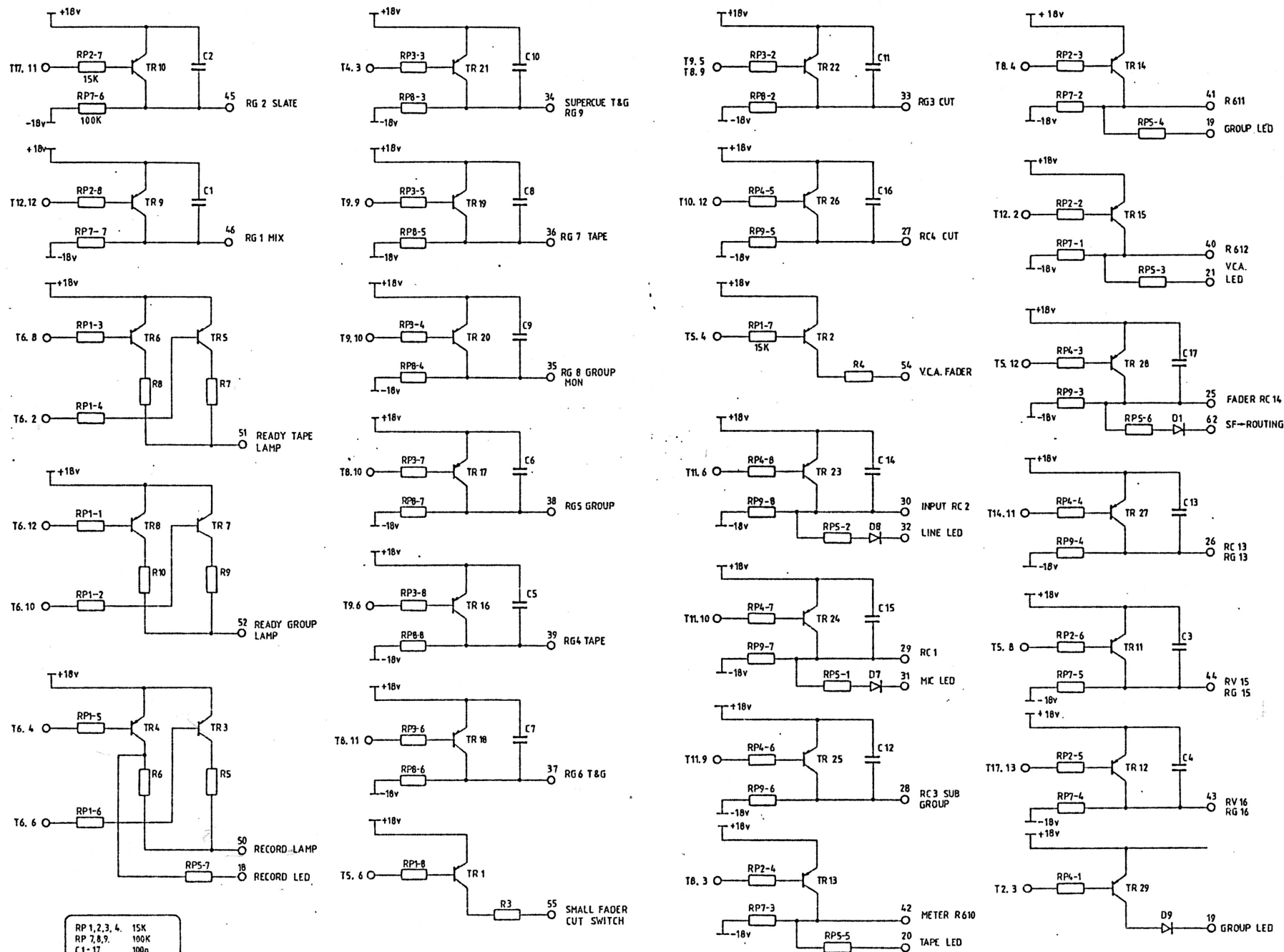
To: 611E/V Mother Board

| No | Description                      | No | Description                       |
|----|----------------------------------|----|-----------------------------------|
| 1  | VCAs to Meters Bus               | 37 | RG6 Control o/p                   |
| 2  | Solo Disable Bus                 | 38 | RG5 Control o/p                   |
| 3  | Status Record Bus                | 39 | RG4 Control o/p                   |
| 4  | Machine Record Bus               | 40 | RG12 Control o/p                  |
| 5  | Record contact d. Sense common   | 41 | RG11 Control o/p                  |
| 6  | VCA Fader Cut from 82E13 p23     | 42 | RG10 Control o/p                  |
| 7  | Small Fader Solo Cut Bus         | 43 | RG16, RV16 Control o/p            |
| 8  | Status Mix Bus                   | 44 | RG15, RV15 Control o/p            |
| 9  | VCA Fader Solo Cut Bus           | 45 | RG2 Control o/p                   |
| 10 | Slate Control Bus                | 46 | RG1 Control o/p                   |
| 11 | VCA to Monitor Bus               | 47 | NP                                |
| 12 | +11v                             | 48 | NP                                |
| 13 | +18v                             | 49 | NP                                |
| 14 | Sub-Group switch input           | 50 | Record Lamp                       |
| 15 | Record Contact c. Sense input    | 51 | Ready Tape Lamp                   |
| 16 | Record Contact b. Relay Common   | 52 | Ready Group Lamp                  |
| 17 | Record Contact a. Relay Contact  | 53 | Master Ready Group bus            |
| 18 | Record LED                       | 54 | VCA Cut Lamp                      |
| 19 | Group LED                        | 55 | SF Cut LED                        |
| 20 | Tape LED                         | 56 | SF Cut Switch                     |
| 21 | VCA to Meter LED                 | 57 | SF Solo Switch                    |
| 22 | Key Way                          | 58 | Ready Group Switch                |
| 23 | Solo Mute to Computer (Not Used) | 59 | Ready Tape Switch                 |
| 24 | -18V                             | 60 | Record Switch                     |
| 25 | RC14, RG14 Control o/p           | 61 | VCA Solo Switch                   |
| 26 | RC13, RG13 Control o/p           | 62 | Small Fader Routing LED           |
| 27 | RC4 Control o/p                  | 63 | NP                                |
| 28 | RC3 Control o/p                  | 64 | NP                                |
| 29 | RC1 Control o/p                  | 65 | NP                                |
| 30 | RC2 Control o/p                  | 66 | Flip Switch                       |
| 31 | Mic LED                          | 67 | NP                                |
| 32 | Line LED                         | 68 | Float Switch                      |
| 33 | RG3 Control o/p                  | 69 | Float Switch                      |
| 34 | RG9 Control o/p                  | 70 | Spare to 611 Edge connector U53   |
| 35 | RG8 Control o/p                  | 71 | Master input flip bus (broadcast) |
| 36 | RG7 Control o/p                  |    |                                   |

T82012.50

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| Rev. | Issue | Chkd          | Details                                                               |
|------|-------|---------------|-----------------------------------------------------------------------|
| 9    | a     | RA            | DRAWN 5-84 V.B.                                                       |
| 9    | b     |               | NOTE RP 1 ETC<br>ADDED.                                               |
| 10   | a     | DM<br>Apr 86  | REV. UPDATED. 2-5                                                     |
| 10   | b     | WPC<br>Oct 86 | EMITTER ADDED TO<br>TRANSISTORS TR 1-29<br>& C 1-17 ADDED TO<br>NOTES |

Title LOGIC CARD DRIVER  
CIRCUITS.

Drg. No. T82012-72

Solid State Logic

## 82E12 - LOGIC CARD CIRCUIT EXPLANATION

### Module Functions

The logic circuits control the FET switching in the module from two sets of input data: the status buses from the 651 master status logic and the state of the switches on the module itself. All incoming logic commands are active high. A logic low is defined as +11v and a logic high as +18v. The main logic signals generated on the board are described with their abbreviations as they appear on the circuit diagram. In the following descriptions any word in block capitals refers to a logic function, (ie: AND means an and gate function).

|                     |                                                                                                                                                                                                                                                                     |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Mix</b>   | This is the Status Mix Bus AND (NOT Record Status Bus OR (Ready Group AND Ready Tape = 0))                                                                                                                                                                          |
| <b>ARG</b>          | Actual Ready Group. This is the Status Record Bus AND Ready Group switch on that channel.                                                                                                                                                                           |
| <b>ART</b>          | Actual Ready Tape. This is the Status Record Bus AND Ready Tape switch on that channel. This is the same as Actual Ready Group except that it is exclusive, the Ready Group has priority. Both may exist together on a channel until that channel goes into record. |
| <b>Track Record</b> | This is the Status Record Bus AND the Machine Record Bus AND the channel Record Switch. The record switch logic will not be activated until a Ready switch has been activated, therefore the Track Record function is dependant on a Ready switch.                  |
| <b>NCF</b>          | Normal Cut Function. RC4 Channel Cut operated by VCA Fader Cut or Solo Bus. RG3 Monitor Cut operated by Small Fader Cut or Solo Bus.                                                                                                                                |
| <b><u>NCF</u></b>   | NOT Normal Cut Function. The inverse of NCF.                                                                                                                                                                                                                        |
| <b>RG</b>           | Ready Group. The input from the Ready Group switch.                                                                                                                                                                                                                 |
| <b>RT</b>           | Ready Tape. The input from the Ready Tape switch.                                                                                                                                                                                                                   |



## SuperCue, Monitors & Meter Selection

**SuperCue:** This is the pre monitor fader signal feed to the Cue/Aux PRE switches.  
 DIL SW 4 on the Logic board determines whether pre monitor fader sends are cut by monitor cut or not.

SW 4 OFF SuperCue not Cut by Monitor Cut. (NORMAL STATE)  
 SW 4 ON SuperCue cut by Monitor Cut.

The table below defines the SuperCue, Monitor and Meter signals pre and post drops.

Ready: Record Switch AND ( Ready Group OR Ready Tape )  
 Record: TRACK RECORD

| Ready Selection or Status | Supercue Signal             | Monitor Signal     | Meter reads              |
|---------------------------|-----------------------------|--------------------|--------------------------|
| Record Status             | Ready   Record              | Ready   Record     |                          |
| Ready Group               | Group   Group               | Group   Group      | Group                    |
| Ready Tape                | G + T   Group               | Tape   Group       | Tape                     |
| Ready Gp & T              | G + T   Group               | G + T   Group      | Group                    |
| Mix &/or Replay           | Tape   n/a                  | Tape   n/a         | Tape                     |
| Overridden by             | Monitor Cut<br>If SW 4 = ON | RG3<br>Monitor Cut | RG12<br>VCA to<br>Meters |

Truth table  
for RG4-RG9

Cut functions  
are excluded

0 = OFF  
1 = ON

RT = READY TAPE  
RG = READY GROUP  
TR = TRACK RECORD

| Module<br>Status | SuperCue |   |   | Monitor |   |   |
|------------------|----------|---|---|---------|---|---|
|                  | T+G      | G | T | T+G     | G | T |
| RT   RG   TR     | 9        | 8 | 7 | 6       | 5 | 4 |
| 0   0   0        | 0        | 0 | 1 | 0       | 0 | 1 |
| 0   1   0        | 0        | 1 | 0 | 0       | 1 | 0 |
| 0   1   1        | 0        | 1 | 0 | 0       | 1 | 0 |
| 1   0   0        | 1        | 0 | 0 | 0       | 0 | 1 |
| 1   0   1        | 0        | 1 | 0 | 0       | 1 | 0 |
| 1   1   0        | 1        | 0 | 0 | 1       | 0 | 0 |
| 1   1   1        | 0        | 1 | 0 | 0       | 1 | 0 |

## Fader Input and Output Selection

RG15 - Monitor Input to the Small Fader.

RG16 - Channel Input to the Small Fader.

RC13 - Small Fader Output to the Quad Bus.

RG14 - Small Fader Output to the Routing.

RV15 - Channel Input to the VCA Fader.

RV16 - Monitor Input to the VCA Fader.

RC13 - VCA Fader Output to the Routing.

RG14 - VCA Fader Output to the Quad Bus.

These functions are defined in the table below:

MIX = MODULE MIX

0 = OFF

1 = ON

| MODULE STATUS |       |            | RELAY        |              |              |              | CUT STATUS |
|---------------|-------|------------|--------------|--------------|--------------|--------------|------------|
| MIX           | FLOAT | VCA TO MON | RC13<br>RG13 | RC14<br>RG14 | RV15<br>RG15 | RV16<br>RG16 | NCF        |
| 0             | 0     | 0          | 1            | 0            | 1            | 0            | 1          |
| 0             | 1     | 0          | 0            | 1            | 1            | 0            | 1          |
|               | 0     | 1          | 0            | 1            | 0            | 1            | 0          |
| 0             | 1     | 1          | 1            | 0            | 0            | 1            | 0          |
| 1             | 0     | N/A        | 0            | 1            | 1            | 0            | 1          |
| 1             | 1     | N/A        | 1            | 0            | 1            | 0            | 1          |

## Cut and Solo Buses

Two sets of each, one for the large fader and one for the small fader. Both these busses are active high, and behave in the same manner.

## Slate Control

RG1 =  $\overline{\text{RG2}}$ .

RG1 - Mix amp to the Group Output.

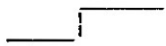
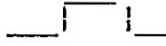
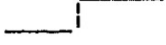
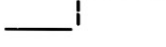
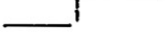
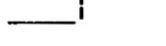
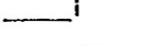
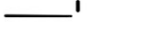
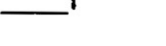
RG2 - Slate Bus to the Group Output.

RG1 is normally active, except when the Slate bus is high.

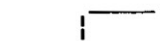
## Master Status Bus Logic Inputs

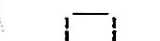
|                      |                                                                                                                                                                                |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RECORD               | Active high in Console Record Status.                                                                                                                                          |
| MIX                  | Active high in Console Mix Status.                                                                                                                                             |
| MASTER READY GROUP   | Option to switch all channels to RG on a master basis.                                                                                                                         |
| VCA TO MONITOR       | Active high with VCA to MON AND (RECORD OR REPLAY)(NOT MIX) Status selected.                                                                                                   |
| MACHINE RECORD BUS   | Active high when Master Machine is in Transport Record or Drop in Rehearsal is operating.                                                                                      |
| MASTER INPUT FLIP    | Active high when selected on 651. If configured for (BROADCAST) BROADCAST MODE by changing links on the 82E12s and the 82E21: RECORD AND BROADCAST = MIX AND MASTER INPUT FLIP |
| SLATE                | Active high when OMNI or TONE TO GROUPS operated.                                                                                                                              |
| SOLO DISABLE BUS     | Active high when AFL status is selected.                                                                                                                                       |
| VCA FADER SOLO BUS   | Active high when any channel VCA solo is operated.                                                                                                                             |
| SMALL FADER SOLO BUS | Active high when any Small fader solo is operated.                                                                                                                             |
| VCA TO METERS        | Active high when function selected on 651.                                                                                                                                     |

## Channel Status Logic Inputs

|                  |                                                                                     |
|------------------|-------------------------------------------------------------------------------------|
| READY TAPE       |  |
| READY GROUP      |  |
| RECORD           |  |
| FLIP             |  |
| FLOAT            |  |
| SUBGROUP         |  |
| SMALL FADER SOLO |  |
| SMALL FADER CUT  |  |
| VCA FADER SOLO   |  |
| VCA FADER CUT    |  |

All active High.

 = Locking Switch Function.

 = Momentary Switch Function.

## Channel Input Selection

RC4 - Channel Input Cut FET. Takes priority over RC1, RC2 and RC3.  
RC3 - Sub Group Input FET. Takes priority over RC1 and RC2.

RC2 - Line Input FET | \_\_\_\_\_  
RC1 - Mic Input FET | \_\_\_\_\_ EXCLUSIVE OR function.

RC2 is active when MODULE MIX is high | \_\_\_\_\_ Except when the Flip  
RC1 is active when MODULE MIX is low | \_\_\_\_\_ switch is operated.